

U.S. Patent Application No. 10/071,841  
Amendment dated September 27, 2004  
Reply to Office Action of July 9, 2004

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

Claim 1 (currently amended): A method of recovering metal and/or oxide thereof present in a slurry comprising steps (a) - (d):

- (a) magnetically separating at least a portion of magnetic impurities present in said slurry from said slurry so that said slurry has at least a portion of remaining magnetic impurities and said metal and/or oxide thereof that is not magnetically separable at below 2,000 gauss;
- (b) leaching or dissolving at least a portion of the remaining magnetic impurities in said slurry after step (a);
- (c) adding at least one chelating agent to said slurry after step (a) and/or (b);  
and
- (d) recovering solids comprising said metal and/or oxide thereof present in said slurry after step (c).

Claim 2 (original): The method of claim 1, further comprising forming a new slurry with the solids obtained from step (d).

Claim 3 (original): The method of claim 2, further comprising adding at least one surfactant to said new slurry.

Claim 4 (original): The method of claim 3, wherein said surfactant comprises sulphosuccinamate.

Claim 5 (original): The method of claim 1, wherein said magnetic impurities comprise iron.

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Claim 6 (original): The method of claim 1, wherein said metal and/or oxide thereof comprises at least one valve metal and/or oxide thereof.

Claim 7 (original): The method of claim 1, wherein said metal and/or oxide thereof comprises tantalum and/or oxide thereof.

Claim 8 (original): The method of claim 1, wherein said metal comprises tantalum and/or oxide thereof and said magnetic impurities comprise iron.

Claim 9 (original): The method of claim 1, wherein said chelating agent comprises citric acid.

Claim 10 (original): The method of claim 1, wherein said magnetically separating comprises applying a magnetic force of 2000 gauss or lower to said slurry in order to attract at least a portion of said magnetic impurities.

Claim 11 (original): The method of claim 1, wherein said recovering solids is accomplished by the filtration of the slurry to recover said solids.

Claim 12 (original): The method of claim 1, wherein prior to magnetically separating, said slurry is subjected to a gravity separation.

Claim 13 (currently amended): The method of claim 1, wherein said new slurry is subjected to a flotation process to recover said metal from said new slurry.

Claim 14 (currently amended): A metal and/or oxide thereof recovered by the method of claim 1, wherein said metal and/or oxide thereof is tantalum or niobium or an oxide thereof.

Claim 15 (currently amended): The metal and/or oxide thereof recovered by the method of claim 6, wherein said metal and/or oxide thereof is tantalum or niobium or an oxide thereof.

Claim 16 (currently amended): Tantalum and/or oxide thereof recovered by the method of claim 7, wherein said metal and/or oxide thereof is tantalum or niobium or an oxide thereof.

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Claim 17 (currently amended): Tailings obtained from ore comprising 250 ppm or less  $\text{Ta}_2\text{O}_5$  in said tailings, wherein the ore is pegmatite, and wherein said tailings have a particle size of from about 1 micron to about 100 microns.

Claim 18 (original): The tailings of claim 17, wherein said tailings comprise 200 ppm or less  $\text{Ta}_2\text{O}_5$ .

Claim 19 (original): The tailings of claim 17, wherein said tailings comprise from about 10 ppm to about 200 ppm  $\text{Ta}_2\text{O}_5$ .

Claim 20 (currently amended): Tailings obtained from ore comprising 250 ppm or less tantalum and/or oxide thereof in said tailings, wherein the ore is a tantalum bearing ore, and wherein said tailings have a particle size of from about 1 micron to about 100 microns.

Claim 21 (original): The tailings of claim 20, wherein said tantalum bearing ore contains at least about 0.025 wt%  $\text{Ta}_2\text{O}_5$ , based on the weight of the ore.

Claim 22 (original): The tailings of claim 20, wherein said tantalum bearing ore comprises one or more tantalum minerals.

Claim 23 (original): The tailings of claim 22, wherein said tantalum minerals comprise wodginite, pyrochlore-microlite group, microlite, Simpsons site, colombo-tantalite group, tantalite, ixiolite, bismutite-tantalite, tapiolite, titano-wodginite, rankamaite, or combinations thereof.

Claim 24 (original): The tailings of claim 20, wherein said tantalum bearing ore is carbonatite, apogranite, alkaline complex, pegmatitic granite, syenite, or combinations thereof.

Claim 25 (original): The tailings of claim 20, wherein said tailings comprise from about 10 ppm to about 100 ppm  $\text{Ta}_2\text{O}_5$ .

Claim 26 (original): The tailings of claim 20, wherein said tailings comprise from about 10 ppm to about 70 ppm  $\text{Ta}_2\text{O}_5$ .

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Claim 27 (new): A method of recovering metal and/or oxide thereof present in a slurry comprising:

- (a) magnetically separating at least a portion of magnetic impurities present in said slurry from said slurry;
- (b) leaching or dissolving at least a portion of the remaining magnetic impurities in said slurry;
- (c) adding at least one chelating agent to said slurry; and
- (d) recovering solids comprising said metal and/or oxide thereof present in said slurry, wherein said metal and/or oxide thereof comprises tantalum and/or oxide thereof.

Claim 28 (new): A method of recovering metal and/or oxide thereof present in a slurry comprising:

- (a) magnetically separating at least a portion of magnetic impurities present in said slurry from said slurry;
- (b) leaching or dissolving at least a portion of the remaining magnetic impurities in said slurry;
- (c) adding at least one chelating agent to said slurry; and
- (d) recovering solids comprising said metal and/or oxide thereof present in said slurry, wherein prior to magnetically separating, said slurry is subjected to a gravity separation.

Claim 29 (new): The tailings of claim 17, wherein said particle size is from about 1 micron to about 75 microns.

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Claim 30 (new): The tailings of claim 17, wherein said particle size is from about 5 microns to about 35 microns.

Claim 31 (new): The tailings of claim 20, wherein said particle size is from about 1 micron to about 75 microns.

Claim 32 (new): The tailings of claim 20, wherein said particle size is from about 5 microns to about 35 microns.

Claim 33 (new): The method of claim 28, wherein said metal and/or oxide thereof is a valve metal and/or oxide thereof.

Claim 34 (new): The method of claim 1, wherein said metal and/or oxide thereof is tin, copper, nickel, lead, cobalt, or oxides thereof.

Claim 35 (new): The method of claim 1, wherein said leaching or dissolving is achieved by the addition of one or more acids.

Claim 36 (new): The method of claim 1, wherein said step (b) and step (c) occur at about the same time.

Claim 37 (new): The method of claim 35, wherein said chelating agent and said acid are added at about the same time.

Claim 38 (new): The method of claim 1, wherein said slurry has a pH of about 4 or lower throughout said method.

Claim 39 (new): The method of claim 1, wherein said metal and/or oxide thereof has a particle size of from about 1 micron to about 100 microns.